

## REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

Claims 1-4 and 6-30 are pending in this application. Claims 1 and 14 are independent.

The Official Action rejects independent Claim 1 under 35 U.S.C. §102(b) over U.S. Patent No. 5,021,259 to Singelyn, or alternatively under 35 U.S.C. §103(a) over Singelyn; and rejects independent Claim 14 under 35 U.S.C. §103(a) over Singelyn in view of U.S. Patent No. 5,211,990 to McKinney et al. ("McKinney"). The rejections are respectfully traversed.

Independent Claim 1 is directed to a method of providing a substrate with a coating layer of a polymeric material. The method comprises a) suspending a pulverous, polymeric material in a fluid, the polymeric material possessing a softening temperature and a melting temperature, b) pressurizing the fluid to produce a pressurized suspension, c) ejecting the pressurized suspension onto the substrate to form the coating layer, and d) heating the polymeric material, during any one of the steps a)-c), to a temperature above the softening temperature of the polymeric material and below the melting temperature of the polymeric material.

Independent Claim 14 is directed to a device for providing a substrate with a coating layer of a polymeric material. The device comprises mixing equipment, arranged to suspend a pulverous polymeric material in a fluid; pressurizing equipment, arranged to pressurize said fluid; at least one nozzle operatively connected to the pressurizing equipment and arranged to eject the suspension of polymeric material in fluid towards the substrate; and heating equipment arranged to

heat the polymeric material to a temperature above the softening temperature of the polymeric material and below the melting temperature of the polymeric material.

Singelyn discloses a method for applying a thermoplastic polymer coating to a surface to create a semi-fused, highly porous coating (see col. 2, lines 22-27 of Singelyn). The method involves spraying fluoroelastomer powder through the flame of a thermal spray gun onto a tie coat 10 prepared on a metal substrate 12 (see Fig. 1 and col. 3, lines 18 and 19). To achieve the highly porous coating, the flame temperature heating the thermoplastic particles *prevents melting and coalescing* of the thermoplastic particles (see col. 3, lines 26-30 and 34-39).

The Official Action acknowledges that Singelyn fails to disclose suspending a pulverous, polymeric material in a fluid, pressurizing the fluid to produce a pressurized suspension, and ejecting the pressurized suspension as recited in independent Claim 1 (see page 3, lines 9 and 10 and on page 6, lines 10 and 11 of the Official Action). However, the Official Action takes the position that all of these steps would have been obvious because they are conventional in the art. For example, the Official Action cites McKinney as disclosing a flame spray gun in which a stream of particulate material entrained in pressurized conveying air and a stream of pressurized combustion and propelling air are delivered in a concentric annular configuration to a combustion chamber so that the particulate material stream passes through a flame tunnel to maximize the rate at which the particulate material is applied to a substrate surface (see col. 1, lines 20-34 of McKinney).

However, one skilled in the art would not have modified Singelyn's method to include suspending a pulverous, polymeric material in a fluid. As discussed above, Singelyn's method seeks to prevent the coalescing of the particles into a non-porous coating on contact with the substrate (see col. 3, lines 34-36). Singelyn discloses

that fluoroelastomer powder is sprayed through the flame of a thermal spray gun onto the tie coat 10 (see col. 3, lines 18 and 19). Fluoroelastomer powder, as opposed to a suspended fluid, helps prevent the coalescing of the particles into a non-porous coating on contact with the substrate (see col. 3, lines 34-36). That is, modifying Singelyn's fluoroelastomer powder to be suspended in a fluid would promote the coalescing of the thermoplastic particles upon contact with the substrate. Thus, one skilled in the art would not have desired to modify Singelyn's fluoroelastomer *powder* to be suspended in a fluid.

Further, *pressurizing* Singelyn's fluoroelastomer powder and ejecting the *pressurized* powder would undesirably result in the particles impacting the surface with such force that they coalesce on contact with the substrate (see col. 3, lines 56-60 of Singelyn). Thus, one skilled in the art would not have modified Singelyn's method to pressurize the fluoroelastomer powder and eject the pressurized powder. In this regard, it is also submitted that one skilled in the art would not have modified Singelyn's method to include the flame spray gun disclosed by McKinney because the flame spray gun is configured to maximize the rate at which the particulate material is applied to a substrate surface (see col. 1, lines 30-34 of McKinney).

In view of the above, Singelyn and McKinney, either alone or in combination, fails to disclose, and would not have rendered obvious, the combination of features recited in independent Claims 1 and 14. Therefore, independent Claims 1 and 14 are patentable over Singelyn and McKinney for at least the reasons discussed above.

Claims 2-4, 6-13 and 15-27 are patentable over the applied references at least by virtue of their dependence from patentable independent Claims 1 and 14, respectively, as well as for the additional subject matter these claims recite.

For example, Claim 27 recites that the fluid is pressurized to a pressure of about 100 bar. The Official Action acknowledges that Singelyn and McKinney fail to disclose that a fluid is pressurized to the claimed pressure, but takes the position that this pressure would have been obvious as a result of mere optimization (see page 4, lines 15 and 16 of the Official Action). However, modifying Singelyn's method to include this pressure would make Singelyn's particles impact the substrate with such force that they coalesce on contact with the substrate. As discussed above, Singelyn seeks to prevent particles from coalescing on contact with the substrate (see col. 3, lines 34-36 of Singelyn). Thus, Claim 27 is patentable over the applied references for at least this reason, as well as by virtue of its dependency from patentable independent Claim 1.


Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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